

REMARKS

Claims 1-27, 29, 31-33, and 53-65 are pending. Claim 1, 4, 7, 9, 11, 21-23, 29, 31-33, and 53-55 have been previously presented. Claims 2, 3, 5, 6, 8, 10, 12-20, and 24-27 are original. Claims 28, 30, and 34-52 have been canceled. No new matter has been introduced by the amendment.

1. Summary of Telephonic Interview with the Examiner on September 15, 2009

The Applicant's representative appreciates the Examiner's time in a telephonic interview on September 15, 2009 regarding the present patent application. In addition to the information in the Examiner Interview Summary mailed September 23, 2009, the following is noted regarding the interview. In the interview, independent claims 1, 4, 7, and 9 were discussed specifically. Claims 2, 3, 5, 6, 8, 10-27, 29, 31-33, and 53-65 were discussed generally. The references of McEntee and Paolini were discussed. The Applicant's representative argued that McEntee does not teach or suggest a chemically functional layer, and that neither McEntee nor Paolini teaches or suggests a surfactant to not significantly reduce the volume resistivity of the continuous phase that is electrically insulative. The Applicant's representative also argued that there is no reason to combine McEntee and Paolini. The general thrust of the principal arguments presented is repeated in the arguments below.

2. Claim Rejections under 35 U.S.C. § 103(a)

A. Claim 1-8

Claims 1-8 and 53-65 have been rejected under 35 U.S.C. §103(a) over McEntee et al. (U.S. Pat. Pub. No. 2004/0050701) in view of Paolini et al. (U.S. Pat. Pub. No. 2002/0131147). The Applicants respectfully traverse the rejections based on the following remarks.

The Examiner has conceded that McEntee does not teach about an emulsion including an electrically insulative continuous phase, the emulsion comprising a surfactant not significantly reducing the volume resistivity of the continuous phase (Office Action, pages 4 and 19). The Examiner attempts to cure this deficiency of McEntee by asserting that Paolini teaches an emulsion comprising a surfactant not significantly reducing the volume resistivity of the continuous phase (Office Action, page 7). Also, although the Examiner has conceded that Paolini teaches an *aqueous* - and thus *conductive, not an electrically insulative* – system, the Examiner nevertheless asserted that a *prima facie* case of obviousness has been made out as to independent claims 1, 4, and 7, which require an emulsion including an *electrically insulative* continuous phase, the emulsion comprising a surfactant, and the surfactant being selected to not significantly reduce the volume resistivity of the continuous phase (emphasis added).

The Applicant traverses the asserted reasoning underlying the asserted *prima facie* case. In Paolini, as the Examiner has conceded, the continuous phase is *aqueous* so obviously the surfactant cannot be considered to not affect the volume resistivity because an aqueous phase is not electrically insulative in the first place. For the Examiner to state that he is citing Paolini merely because it uses a surfactant misses the point. First, there is no teaching or suggestion in Paolini that the surfactant would not significantly reduce the volume resistivity of the continuous phase because in aqueous systems it is an irrelevant consideration – the volume resistivity in aqueous systems would be low anyway, either in the presence or absence of the surfactant. Second, since Paolini uses aqueous systems, this reference does not teach or suggest any surfactant that would not significantly reduce the volume resistivity of the continuous phase that is *electrically insulative*, as required by independent claims 1, 4, and 7. Put in another way, the mere effect, if any, of a surfactant upon the volume resistivity of a continuous phase in an

aqueous system teaches or suggests nothing about possible effect of this surfactant upon a continuous phase in an *electrically insulative* system.

Because neither McEntee nor Paolini teaches or suggests any emulsion including an electrically insulative continuous phase, the emulsion comprising a surfactant not significantly reducing the volume resistivity of the continuous phase, the rejections against independent claims 1, 4, and 7 are improper.

Also, neither McEntee nor Paolini teaches a chemically functional layer on the dielectric layer. The Examiner asserted that McEntee teaches substrates comprising additional layers for chemical and biological array fabrication (Office Action, page 4). In the interview, the Examiner further asserted that McEntee discloses *in situ* synthesis of DNA and RNA microarrays, and thus it is inherently that the substrate has a chemically functional layer in order for the DNA and RNA moieties to be immobilized to the substrate. There is, however, no disclosure in McEntee as to whether the immobilization in the *in situ* synthesis is chemical or physical. If the immobilization is, for example, by physical adsorption, it would not require a chemically functional layer. Thus, the Examiner's inherency argument fails because the mere fact that McEntee discloses *in situ* synthesis does not mean this reference necessarily teaches a chemically functional layer.

In view of the above, the Applicant respectfully submits that McEntee in view of Paolini do not teach or suggest all the claimed limitations as recited in independent claims 1, 4 and 7. Accordingly, the rejections against independent claims 1, 4, and 7, and thus the rejections against claims 2-3, and 5, 6, 8, which all depend from independent claims 1 and 4, respectively, are improper and should be withdrawn.

B. Claims 9-27, 29, And 31-33

Claims 9-27, 29, and 31-33 have been rejected under 35 U.S.C. §103(a) over McEntee in view of Montgomery (U.S. Pat. No. 6,280,595) further in view of Paolini. The Applicant respectfully traverses the rejections based on the following remarks.

As discussed in section 2A above, McEntee and Paolini do not teach or suggest any emulsion including an electrically insulative continuous phase, the emulsion comprising a surfactant not significantly reducing the volume resistivity of the continuous phase, as recited in independent claim 9. McEntee and Paolini do not teach or suggest the substrate comprises a support, a conductive layer on the support, a dielectric or photoconductive layer of a material which will hold an electric charge disposed on the conductive layer and the chemically functional layer on the dielectric or photoconductive layer. Montgomery does not overcome these deficiencies of McEntee and Paolini.

In view of the above, the Applicant respectfully submits that McEntee in view of Montgomery and further in view of Paolini do not teach or suggest all the claimed limitations as recited in independent claim 9. Accordingly, the rejection against independent claim 9 is improper and should be withdrawn.

Moreover, the dependent claims are patentable since they depend from the patentable independent claim 9.

In addition, the Examiner fails to show how the further limitations recited in the dependent claims would be made obvious in view of the cited references.

For example, claim 11 requires “the continuous phase of the emulsion comprises a volume resistivity of approximately 1×10^6 ohm-cm or greater”. The Examiner asserted that Paolini teaches a continuous phase emulsion of a volume resistivity of approximately greater than a million ohm-cm (Office Action, page 14). As discussed above, the continuous phase in Paolini is aqueous. The mere fact

that an aqueous - thus *not* electrically insulative – continuous phase has a certain volume resistivity is irrelevant here since claim 11 requires *an electrically insulative* continuous phase with a volume resistivity of approximately 1×10^6 ohm-cm or greater.

Claim 12 requires “the continuous phase of the emulsion is selected from the group comprising hydrocarbons”. The Examiner asserted that Paolini teaches a continuous phase of the emulsion selected from the mixture of hydrocarbons, aromatic hydrocarbons, and silicon fluids (Office Action, page 14). As discussed above, the continuous phase in Paolini is aqueous. The mere fact that an aqueous - thus *not* electrically insulative – continuous phase may comprise hydrocarbons is irrelevant here since claim 12 requires *an electrically insulative* continuous phase of the emulsion is selected from the group comprising hydrocarbons.

Claim 13 requires “wherein the continuous phase of the emulsion is a gel or highly viscous liquid”. The Examiner asserted that Paolini teaches the continuous phase of the emulsion is a highly viscous liquid (Office Action, page 14). As discussed above, the continuous phase in Paolini is aqueous. The mere fact that an aqueous - thus *not* electrically insulative – continuous phase may comprise a highly viscous liquid is irrelevant here since claim 13 requires *an electrically insulative* continuous phase of the emulsion is a gel or highly viscous liquid.

3. Conclusion

Based on the above, the Applicant respectfully submits that the claims are in condition for allowance. The Examiner is kindly invited to contact the undersigned attorney to expedite allowance.

Respectfully submitted,

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/Yuezhong Feng/
Yuezhong Feng, Ph.D.
Registration 58,657
Attorney for Applicants

BRINKS HOFER GILSON & LIONE
P.O. BOX 10395
CHICAGO, IL 60610
(312) 321-4200